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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE • OCTOBER 27, 1945

TECHNOLOGY DEPT.

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A SCIENCE SERVICE PUBLICATION

WAR BARGAINS in LENSES and PRISMS

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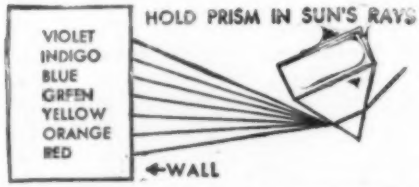

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3001-Q	Lens Surface	20 mms.	14 mms.	2.00
3006-Q	Porro-Abbe	9 mms.	9 mms.	.25
3009-Q	Porro	52 mms.	25 mms.	1.00
3010-Q	Porro	43 mms.	21 mms.	.50
3016-Q	Pentagon	45 mms.	22 mms.	.75
3029-Q	Dove	16 mms.	65 mms.	1.25
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TWO SETS (4 UNITS)
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GENERAL SCIENCE

Research To Be Supported

Has been advocated at Senate hearings, but world implications of atomic energy proposals overshadow national science plans.

➤ THERE is going to be government support on a large scale for the sort of scientific research that will wrest new secrets, not just from the atoms, but many other sectors of the scientific unknown.

That much was clear with the Senate hearings on the National Research Foundation bills in their second week. And coupled with the broad research set-up are provisions for a plan for scholarships and fellowships for promising young scientists that will keep the scientific personnel of the nation up to fighting strength, ready to battle disease, poverty, and depression as well as military enemies.

The difference of opinion in the hearings arises with regard to how the proposed National Research Foundation is to be controlled and whether or not the act shall specify the degree of patent control the government shall exercise over the results of researches.

The organization for the proposed foundation provided in the bill of Senator Harley M. Kilgore (Dem., W. Va.), is a so-called "in-line" plan, consisting of a director, with an advisory committee with scientists in its membership and working divisions headed by scientists and committees of scientists. The director would have powers and responsibilities similar to those of a federal department head, and he would be appointed by the President and confirmed by the Senate and therefore be removable by the President. This form of organization has been supported in testimony of Secretary of Commerce Henry Wallace and Budget Director Harold D. Smith.

The other suggested organization for the Foundation would put control in a board of nine Presidential appointees who would serve without compensation and who would appoint a director to serve under them. This procedure was recommended by the "The Endless Frontier" report of Dr. Vannevar Bush, director of the Office of Scientific Research and Development, and is provided in the bill of Senator Warren G. Magnuson (Dem., Wash.).

The Kilgore form of organization is attacked on the ground that it puts the control of scientific research into the realm of so-called "political" control, while the Magnuson plan is criticized because the director is too far removed from democratic control and the governing board would tend to be static and unresponsive to changing conditions.

In both plans, just as in the wartime OSRD, scientists themselves would plan the details and carry out the researches. Under both plans the research itself would be done largely through contracts by university and other non-profit laboratories and industrial laboratories, not by the Foundation itself.

Who shall own the discoveries and any patents resulting is another controversial question. Under the OSRD, and current Army and Navy practice, the government retains only the right to use the results of the research in the work of the government itself. The commercial rights in patents go to the individual scientist and are usually assigned to the industrial or other laboratory conducting the investigation, even though the research is done largely or wholly with government money. This practice is virtually continued under the Magnuson bill through its failure to cover the matter of patents. The Kilgore bill provides that inventions and discoveries resulting from federally financed projects shall be the property of the United States, directs that they shall be patented, and authorizes nonexclusive licenses for all who wish them.

The Kilgore provisions are not favored by industrialists and scientists allied with industry, who would rather see the kind of contract made with the laboratories varied to suit the conditions of the particular piece of research to be done. They predict reluctance on the part of industrial laboratories to undertake investigations with government money if patent rights are lost. On the other hand, supporters of the Kilgore bill feel

BRITISH "FROGMEN"—In their skin-like diving suits, "frog" goloshes, and streamlined breathing helmets, these men of the submarine commando army swam underwater, towing on the surface explosive-packed pneumatic dinghies, placed their demolition charges so skillfully that 3,000 otherwise indestructible underwater steel obstacles blew up under German noses. They also cleared the enemy minefields laid off the invasion coast to make the safe landings on D-Day possible.

that if the public's money is spent the results of the investigation should be made available to all by the government.

Decisions upon these differences, important as they are for the future of American science, begin to seem somewhat unimportant when compared with the vastly larger decisions that will have been made should the May bill on atomic energy control in its present form be passed by Congress.

Under this bill potentially complete control of almost all chemistry and physics, and almost any other branch of science, is placed in the hands of a presidentially appointed commission of nine members, practically secure from removal during their nine-year terms, who in turn appoint an atomic energy administrator who wields unparalleled powers for peacetime. He can force the firing of anyone concerned with any phase of the work without being challenged in the courts. He can seize any property in the nation. He can declare any field of industry or science to come under his control.

Such an atomic energy act would be a declaration of an atomic bomb armament race, and, in fact, the mere consideration and tacit Presidential support of it, is a challenge to other nations with which the United States has been allied, particularly the U.S.S.R.

It is not alone a question as to how we here in America consider this proposal. We need to know how it is received in Moscow and we can guess that it can play a large part in stopping the building of world cooperation so urgently needed.

The atomic bomb is explosive enough, but the attitude toward atomic energy control may start a chain reaction of international rivalry that we will not be able to stop.

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PHYSICS

Atom Research Threatened

Secrecy proposals for all atom research threaten continued investigations. Scientists organize to express views before control is imposed.

▶ AMERICA is in danger of a stoppage of fundamental researches on the atom, the sort of scientific inquiries that gave birth to the atomic bomb.

Scientists by the thousands, those who have been working at the research Shangri-Las of Los Almos, New Mex., Clinton, Tenn., Hanford, Wash., and Chicago, Ill., are concerned about the secrecy provisions in the proposed atomic energy control bill and the chances of having a $300,000 fine or 30 years in jail held over them if they misjudge whether their researches should and should not be announced.

Rather than work under such restraint, many of them, as Dr. Harold C. Urey, Nobelist and heavy water discoverer, has suggested, will turn to safer fields of inquiry such as biological and physiological chemistry. Government control would apply to private, university and industrial investigation in nuclear physics and related chemistry because a license would have to be obtained by every investigator.

If this happens, the brilliant war researches that have produced the practical explosive release of atomic energy and the prospect of application of these researches to peacetime use, will be hampered.

Even now the research work at the government laboratories has slowed down tremendously. The scientists feel that they are not encouraged to push on in experiments that might be productive of new weapons and applications to nonmilitary uses.

The return of a considerable number of the scientists to university and industrial laboratories was expected after the end of the war, but the present exodus to unrestrained research and teaching may deplete the staffs of the atomic laboratories to a dangerous degree.

The attempt in Congress to railroad the atomic control bill with only one day of hearings with pro-control government witnesses only heard has impressed the atomic scientists with the necessity of making their own expert opinions known.

Spontaneously in each of the major centers of atomic research, Oak Ridge, Los Almos and Chicago, groups composed of more than nine-tenths of the scientists there, have organized and formulated statements which point out the necessity for international control of the atomic bomb. The secrets of "know-how" in fabricating the bombs from plutonium can be learned in five years' work or less by another nation, such as the U.S.S.R., they estimate, and for that reason it is considered impractical to try to keep the atomic bomb the exclusive property of the United States, Britain and Canada. Moreover, there is the danger that intensive research in rival laboratories may bring forth new methods of atomic energy release which may have immediate military application.

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"Aquiculture" is raising fish in farm ponds on fertilized water-plants.

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PHYSIOLOGY

Have Ultraviolet Vision

Persons whose front eye lenses have been removed in cataract operations see with ultraviolet radiations invisible to normal eyes.

➤ A "BUG'S-EYE" view of the world is obtained by persons who have had the front lenses of their eyes removed in operations for cataract. Their eyes become sensitive to ultraviolet radiations which have no effect on normal eyes but which many insects are believed to use regularly, Prof. George Wald of Harvard University told members of the Optical Society of America at their meeting in New York.

It was formerly assumed that insects, with their ultraviolet vision, would see a quite different world from the one visible to human beings. However, since there are thousands of men and women who have ultraviolet vision as an after-effect of cataract operations, it has become evident that things do not look particularly different when ultraviolet is added to the ordinary range of visible radiations.

As a special case, Prof. Wald mentioned a brilliant young English physicist, Dr. A. G. Gaydon, who lost his right eye and the lens of his left in an explosion. Courageously carrying on with his researches, which were on light and related radiations, he found that his misfortune was in part good fortune, for he could now see the ultraviolet portions of the spectrum previously invisible.

The eye's front lens, Prof. Wald explained, cuts out ultraviolet and much of the higher blue-violet radiations because its yellowish tinge causes it to act as a ray-filter. This yellow color in the lens, and also the highly sensitive yellow spot in the retina directly opposite the lens, are due to the presence of xanthophyll, a yellow pigment related to carotin, both of which are abundant in such yellow vegetables as carrots and rutabagas, in green leaves, and in the yolks of eggs. Xanthophyll has actually been extracted from the retina.

Studies in Prof. Wald's laboratory have shown wide ranges in sensitivity of the retina to different wavelengths of light. The reginal cones have their maximum sensitivity in the yellow-green part of the spectrum. At the borderline of the ultraviolet the cones still function, but with a sensitivity only about one forty-thousandth of the maximum. Similarly they still function at the lowest red wavelength, at the margin of the infrared, but their sensitivity there is only one ten-thousandth of the maximum.

The retinal rods, which operate chiefly in dim light and "see all things gray", are most sensitive to blue-green light.

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MEDICINE

Promin for Leprosy

Has brought improvement in 137 cases. Sores, other symptoms clear up and the germs disappear. Takes at least six months before improvement shows.

➤ PROMIN, chemical remedy distantly related to the sulfa drugs, comes closer to being a cure for the age-old scourage of leprosy than anything so far known, it appears from results with it at the National Leprosarium in Carville, La.

"The best experimental treatment ever tested at the National Leprosarium" is the verdict given by Dr. G. H. Faget and Dr. R. C. Pogge, U. S. Public Health Service. (*Public Health Reports,* Oct. 5) The chemical has now been given to 137 patients. In these it has checked the progress of the disease and even caused the dreadful sores of leprosy to clear up in some patients. Other symptoms also abated. In more than 10% of 62 patients treated for more than one year no germs could be found in the sores. In another 30%, the patients have had occasional negative bacteriology tests since the treatment was started. Only two patients, each with an advanced mixed type of leprosy with laryngeal involvement, got worse under the treatment and it had to be stopped after a few months.

The results, Dr. Faget and Dr. Pogge believe, are due to a true remedial action of the chemical on the disease and not to psychological response of the patient nor to the chemical's effect on secondary infections or other complications. The improvement is not believed to be a spontaneous remission because it occurred in patients having types of the disease with the worst outlook and least likely to improve spontaneously for a time.

Promin cannot, however, be called a "specific" for leprosy, since it cannot be proved that it acts directly on the germs of the disease. These germs cannot be grown in the laboratory, so no tests of promin's action on them can be made directly. Neither can guinea pig tests be made of promin's effect in leprosy, because the human disease cannot be reproduced in laboratory animals.

The chemical acts slowly. It takes at least six months of treatment before improvement shows. The longer the patient is treated and the more promin he gets, the greater his improvement, the physicians found in more than three years experience with the drug.

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PHYSICS

Mica Indispensable For Many Applications

➤ MICA, now well-known as a war essential because of its electrical properties that make it invaluable in controlling wavelength in radio, has other physical properties that make it almost indispensable in many other applications. Some of the micas have tremendous expansion when heated, an outstanding peculiar property that make them of special use in temperature-control devices.

The micas all vary widely in thermal expansion, power factor, and color, the National Bureau of Standards states. (*Journal of Research.*) Their properties depend upon chemical composition, the nature of the crystals, their magnitude and orientation, amount of impurities, and other features.

The report on the physical properties of mica in the journal is made by Peter Hidnert and George Dickson of the bureau staff and records findings made by them in laboratory studies. They present data on the linear thermal expansion, changes in structure, power factors in radio frequency control, and the effects of heat treatment on thickness, opacity and color of micas from many different sources, both domestic and foreign.

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CHEMISTRY

Improved Plastic

Made from cellulose and natural gas, the new product is lighter, more lustrous, tougher and odorless. Has best balance of desirable characteristics.

➤ MORE LUSTROUS, faster to mold, odorless and tough, a new plastic made from natural gas and wood has been introduced to commerce by Celanese Plastics Corporation.

Named Forticel, it is made from cellulose and propionic acid. It was merely a laboratory product until Celanese chemists developed a new process for producing propionic acid for the first time in this country from natural gases in commercial quantities at reasonable prices.

The process is in operation now at the company's new chemical plant at Bishop, Texas. While present production is limited to a small pilot plant, a steady moderate production of Forticel by next January is to be followed by large-scale production as soon as plans already approved for this purpose can be carried out.

Forticel is the culmination of years of intensive research devoted to the study of scores of chemical combinations developed by introducing organic acid or alcohol radicals into the cellulose molecular chain.

Of all the cellulosic compounds produced, Forticel has, in the opinion of Celanese chemists, the best balance of desirable characteristics.

As a thermoplastic the most economical and satisfactory process for making Forticel into finished articles is by injection and extrusion molding. Finished products are characterized by an unusual surface luster and brilliant mold finish, obtained without any mechanical polishing. The molding cycle has been reduced as much as twelve seconds where Forticel replaced cellulose acetate in tests in the same die. In certain instances this gain in molding time was equivalent to a 25% increase in production. The superior plastic flow quality of Forticel in the molding operation insures virtually invisible weld lines where two streams of plastics meet in the die. These lines are often the seat of mechanical as well as visual flaws. Other scientific tests showed that Forticel has a greater strength in the weld than any of the present commercial cellulose esters.

Forticel is odorless, so that even the most delicately perfumed lipstick or face powder is not affected. Articles made of it can be painted and lacquered without fear of tackiness. The new plastic has a low specific gravity of about 1.2 or less, thus weighing only slightly more than water. Where 100 molded pieces are obtained from a pound of cellulose acetate 108 pieces can be obtained from Forticel. With a toughness of high impact strength not equalled by any other thermoplastic the consumer can expect longer life and better service from articles molded of Forticel even under the roughest treatment. Colorability of the new plastic includes the full range of the color spectrum and it can be produced in colored mottles and intricate color designs. Also Forticel has the same excellent electrical properties as lumarith (cellulose acetate) and exceeds them in that it has the same high dielectric strength but a lower power factor and a lower dielectric constant. Because of low moisture absorption its electrical properties are little affected by changes in atmospheric conditions.

Special grades of Forticel will be manufactured into sheets and continuous films where good dimensional stability and toughness will tend to further extend the use of the cellulosic plastics.

Numerous uses are predicted for it, including radio housings, steering wheels, house and kitchen utensils, telephones, vacuum cleaner parts, toothbrushes, tool handles, topographic map bases, formed containers, printed dials, electrical insulation, mathematical instruments and glazing materials.

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PUBLIC HEALTH

Rest Is Fundamental Treatment for TB

➤ REST treatment, usually in a sanatorium, "will probably remain as the fundamental remedy for tuberculosis," Drs. H. Corwin Hinshaw and William H. Feldman, of the Mayo Clinic, declare in the *Bulletin of the National Tuberculosis Association*. These scientists have been steadily searching for years for a chemical remedy for tuberculosis and recently reported some promising results with streptomycin, newest of the penicillin type of remedies.

Streptomycin, however, has not yet given the kind of results in tuberculosis that sulfa drugs or penicillin give in some other infectious diseases, such as pneumonia. The Mayo scientists explain this as follows:

"In pneumonia the infection has been present for a few days at most, the inflamed tissues of the lungs are intact and when the drug restrains further multiplication of the pneumococci, the human body promptly recovers in a manner resembling the natural crisis of pneumonia.

"In other diseases, also, successful treatment with drugs merely permits recovery by natural processes, and the promptness of such recovery depends on the nature of the disease process and the defensive powers of the patient.

"Tuberculosis, however, often is a chronic disease which produces destructive changes in tissues. Healing or repair of these tissues is exceedingly slow. Furthermore, in extensive tuberculosis of the lungs which has been progressive for long periods the destructive changes impose serious mechanical handicaps to the healing process. When such mechanical handicaps are present, it is logical to utilize a corrective mechanical type of treatment, such as the conventional surgical collapse procedures rather than treatment with a drug.

"The patient who is faced with the necessity of surgical treatment, therefore, should not hope for any alternative chemical remedy and we would urge him to proceed with the contemplated operation without unnecessary delay."

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ORNITHOLOGY

Army Homing Pigeons Offered for Sale

➤ WANT SOME first-class carrier pigeons?

You can get these feathered GI messengers from the Office of Surplus Property, U. S. Department of Commerce, by sending a certified check or money order for $25. Five pairs of pigeons, aged from one to four years, will be forthcoming. These sales are to be made direct to civilians, without intermediaries.

OSP officials expressed the hope that 4-H clubs, bird fanciers and breeders will take advantage of the sale. It is not possible to furnish pedigrees, but all birds are known to be of good breeding stock, and some have championship potentialities.

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PLANE RIDE—The plane is loaded with four animals. Two attendants are stationed between the first and second sets of stalls. The animals did not mind the altitude, which was 14,000 feet.

AERONAUTICS

"Flying Horsecars"

Hundreds of pack mules and horses were carried over the hump in Burma-to-China transport. Animals merely got sleepy at time of oxygen lack.

➤ THE COW jumped over the moon only in the imagination of the nursery-jingle writer, but mules actually flew over mountains during the recent war. One of the strangest jobs of animal transport ever undertaken, involving carriage by air of 2,682 U. S. Army pack mules and horses, is described in the *Cavalry Journal,* (Sept.-Oct.) by a veterinary officer, Col. Ralph W. Mohri.

The animals had originally been taken into the Burma campaign theater, where jungly, swampy, mountainous terrain had licked all motorized transport, even that mechanical mule, the jeep. Troops served by this old-fashioned but effective hoofed supply train had the Japs well on the road to liquidation, and it was decided to transfer part of them over the Himalayan "hump" into China, where the enemy was still strong.

Air transport of the troops, weapons and supplies was no special problem; that had been going on for a long time. But taking along the indispensable pack animals was something else. Mules and horses had been air-borne in numbers once before in the theater, by the British, but that had not involved so long a hop, nor had it required flight up to 20,000 feet altitude.

Biggest worry was about the possible behavior of the animals at altitudes where men have to put on oxygen masks. Would they take the oxygen lack quietly, or would they become panicky and begin to kick and rear, threatening the safety of all aboard? The event proved the anxiety needless: the animals merely became sleepy. In general, Col. Mohri reports, both horses and mules took their airplane trips very quietly, and without particular excitement.

Planes used were the ATC's old reliable C-47's. They were converted into flying horsecars by taking out the bucket seats and securely wiring in stall partitions of green bamboo. Floors were specially prepared by laying down first a layer of stout plywood, then a waterproof tarpaulin, then heavy coconut matting, and finally hay. From four to six animals could be carried, together with their attendants, and five days' rations for both men and animals. It took about 20 minutes to load a plane, and time in the air was about two and one-half hours.

Science News Letter, October 27, 1945

METEOROLOGY

Radar May Increase Knowledge of Meteorology

➤ RADAR instruments developed for war purposes may play an important part in future weather forecasting and also make permanent records relative to the nature of storms and their movements for use in the science of meteorology. The entire progress of the recent September hurricane in its gradual curve up Florida was accurately plotted on film by Army radar war equipment. Photographs of each radar scope were taken each 15 seconds by electrically operated cameras.

The use of radar to detect storms began at least as early as August, 1943. Before that, Army radar technicians had noticed "ghost echoes" on their relatively primitive scopes but did not realize at first that they were caused by thunderstorms. Later they did, and Army weather observers soon learned how to use radar to plot other storms and they later developed better techniques of detection. But the size and violence of the September 15 storm, and its closeness to the radar station, resulted in new findings about the nature of hurricanes.

Throughout the hurricane the general shape of the disturbance was plainly seen on the micro-wave set, whose energy was reflected excellently from the rain carried by the storm. The storm was seen to be in the shape of a figure six with clockwise spiralling tails. At one time six distinct tails were observed, three of which were detached and were moving northward ahead of the storm's center. These tails were deduced to be rain-bearing storm clouds, or line squalls eight to ten miles in width and from three to five miles apart.

When the hurricane was abreast of the radar station, and only 10 miles away, the radar revealed that the eye of the storm, the low pressure area in its center, was 12 miles in diameter, and the lack of echoes proved that there was no precipitation within it. The height-finding radar set revealed that the dense cloud deck surrounding the eye extended up to an average height of 18,000 feet.

Science News Letter, October 27, 1945

HORTICULTURE

Removing Tops of Carrots Keeps Moisture in Roots

➤ REMOVAL of part or all of the foliage of carrots in shipping and marketing has been advocated from time to time as a means of conserving shipping space and containers.

A series of storage experiments at Cornell University shows that the principal effects of removing carrot tops at the time of harvest is to preserve moisture in the roots.

When stored for seven days at 70 degrees Fahrenheit, and a relative humidity of 65%, topped carrots lost about 40% less moisture than did roots of carrots with tops attached. At a storage temperature of 40 degrees and relative humidity of 70%, the topping of carrots resulted in a 55% reduction in shrinkage losses during a 17-day period.

When the tops were cut back to a length of four inches, the roots lost only little more moisture than did those from which the tops were removed entirely.

At the end of each storage period, the topped carrots had a decidedly better appearance than did the roots with leaves attached, reports Prof. Hans Platenius of the vegetable crops department.

Changes in carbohydrates were practically the same, regardless of whether the carrots had been topped. No significant effect could be observed in the carotene content of the roots as a result of removing the tops.

Science News Letter, October 27, 1945

RADIO

Broadcasting Celebrates 25th Anniversary

➤ RADIO broadcasting is now 25 years old as an American system and its silver anniversary will be celebrated by a National Radio Week, beginning Nov. 4. The week is sponsored by the National Association of Broadcasters in cooperation with the four major networks and the Radio Manufacturers Association.

The first regularly scheduled broadcast, it is claimed by Westinghouse Electric Corporation, was a report of returns of the Harding-Cox presidential election, Nov. 2, 1920, presented on its Pittsburgh station.

The year 1920 does not mark the discovery of radio or of radio broadcasting, but it is the date of the origin of the American broadcasting system. Experimental licenses were granted as early as 1916, but they were for stations experimental in character. In 1920, radio broadcasting ceased to be an experiment and became a permanent adjunct to American life.

The first radio broadcast in history, it is claimed, was on Christmas eve, 1906, from the Fessenden station at Brant Rock, Mass. Morse code radio operators on vessels at sea were among those who picked up the human voice from the air, very much to their surprise, instead of the familiar dots and dashes.

Prof. Reginald A. Fessenden was one of the pioneer radio experimenters. This first broadcast was made possible by the development of the high frequency alternator by Dr. Ernst F. W. Alexanderson, consulting engineer of the General Electric Company, who earlier this year was the recipient of the highly prized Edison medal for 1944, awarded to him for this and other outstanding radio and electronic discoveries.

During radio week, broadcasters, equipment manufacturers and others identified with the American system of broadcasting will tell the public the meaning of this kind of broadcasting, how it came into being, its position in local and national affairs in war and peace, its role as a guardian of free speech, and its contributions to the welfare of the nation and to individual citizens.

Science News Letter, October 27, 1945

AGRICULTURE

Cotton-Picking Machine Operates on New Principle

➤ A MECHANICAL cotton picker operating on a new principle is the subject of patent 2,387,004, obtained by Charles R. Berry of Vicksburg, Miss. It is designed to take advantage of the recently developed method of defoliating the cotton plants with a chemical spray before picking the bolls, which greatly simplifies the mechanics of picking.

The machine runs astride of a cotton row, passing the plants through a kind of tunnel with slots in its sides. From one side, a series of flexible arms mounted on a revolving vertical cylinder keep pressing the plants against the other side. Through the slots on that side reach innumerable slender pins mounted on what the inventor cal's a carding cylinder, and these pick off the cotton bolls. Next to the carding cylinder, within the machine, is a second cylinder, the doffer, which has rows of bristles that knock the bolls off the carding pins and into a conveyor chute that carries them to an accompanying truck or trailer.

Science News Letter, October 27, 1945

IN SCIEN

MEDICINE

Flu Virus Can Also Act Like a Poison

➤ SOME STRAINS of influenza virus can act like a poison, damaging the liver and other organs, as well as causing the disease, influenza, it appears from studies reported by Drs. Werner and Gertrude Henle of the University of Pennsylvania. (*Science*, Oct. 19)

Their findings in studies with mice may explain why some influenza epidemics are worse than others.

The poisonous or toxic effect of influenza virus was discovered when it was injected into the peritoneum of mice. The peritoneum is the membrane which lines the abdomen. The mice died, usually within 72 hours after these injections, although they apparently did not have influenza. In some cases lungs as well as other organs showed the damaging effect of the virus, but in other cases, when a less toxic strain of virus was injected, the lungs were not involved at all. Although the virus may have this poisonous effect on various organs, it can propagate only in the respiratory tract of the mouse.

The poisonous action of the virus shown in their experiments may, the scientists feel, play a part in the development of influenza in man. Different strains of virus varied markedly in their poisonous action in mice which suggests a reason for the difference in severity of influenza epidemics.

Science News Letter, October 27, 1945

PHYSICS

Continued Atom Research By Bohr Assured

➤ THE CONTINUANCE of the scientific researches of Dr. Niels Bohr, leading Danish scientist and Nobelist who worked in America on the atomic bomb, has been assured by the establishment of an endowment fund of $175,000 contributed by 35 Danish firms and funds.

The fund was established in honor of Dr. Bohr's 60th birthday and one of the greetings he received came from Dr. Albert Einstein in Princeton, N. J., who observed that the atom is undoubtedly much more grateful to Bohr for his theory of its structure than for its splitting.

Science News Letter, October 27, 1945

NCE FIELDS

PHYSIOLOGY

Aviators' Visual Blackout Due to Anemia in Eyeballs

➤ BLACKOUT of eyesight in aviators during sharp turns or dive pull-outs at high speeds is due to a temporary anemia in the eyeballs themselves. It can be prevented by suction applied to the eyeballs by special goggles.

These findings, locating the site of origin of this disturbance in the eye, were reported by Dr. E. H. Lambert and Dr. Charles Sheard of the Mayo Clinic at the meeting of the Optical Society of America in New York.

Application of suction to the eyeball, however, is not of practical importance to the aviator to prevent loss of vision during high speed maneuvers because it does not prevent the unconsciousness which occurs at higher levels of centrifugal force than those required to produce visual blackout.

In the experiments reported, a man seated comfortably in a chair on the ground suffered temporary loss of vision, or blackout, when air pressure was applied to his eyeballs through specially constructed goggles. The visual changes were of the same nature as the blackout produced by centrifugal force in high-speed aircraft. Both resulted from a similar impairment of blood supply to the eyeball. The application of mild pressure to the eyeball of a man on the human centrifugal caused him to blackout at lower levels of centrifugal force than usual.

Science News Letter, October 27, 1945

ENGINEERING

Metal-Plated Plastics Coming Into Wider Use

➤ PLASTICS plated with metals, now coming into wide use, particularly in the electrical field, have opened up a large new field in electrical engineering and electronics and inspired laboratory research to develop better electroplating methods of applying the thin metal coatings. A report on such investigations was given at the meeting of the New York section of the national Electrochemical Society by Harold Narcus of the Plating Processes Corporation, Holyoke, Mass.

Metallizing a plastic, he stated, is done either to save critical metals, or to produce a product which has the inherent properties of the plastic in addition to the desired properties of the deposited metal. The most important advantage of plating on plastics, he explained, "is the greater corrosion resistance of a metallic deposit when it is applied to a plastic basis than to the usual metallic basis, since there are no galvanic couples with a basis metal."

Important use of plastics plated with metal is in electrical insulation where screening against magnetic fields is required, high frequency currents, or radium emanation, he stated. Articles made of plastics for these purposes, such as phenols and styrenes, which are excellent electric insulators, are plated with copper, cadmium, or lead.

"This combination of a non-conductor and a conductor promises wide use in radio, television, and in electronics in general," Mr. Narcus continued. "Metals such as aluminum and magnesium are being replaced by plated plastics in aircraft electric shielding and in radio shielding devices." Metallization of plastics is also employed in frequency modulation and television antennae.

"Generally, the most economical, commercially successful method for metallizing plastic," he concluded, "consists in the application to the surface, after proper preparatory treatment, of a highly conductive and strongly adherent bond coat of metallic silver, by reducing an ammoniacal silver nitrate solution with a suitable reducing agent, followed by an intermediate layer of copper and finally a top layer of the desired metal."

Science News Letter, October 27, 1945

INVENTION

Thawing Beef Carcasses From Inside Outward

➤ FROZEN beef carcasses may be thawed from the inside outward, as well as from the surface inward, by a technique on which patent 2,387,221 was awarded to B. E. Williams and L. L. Cadwell of Chicago. The process is very simple: the carcass is left whole, and a flexible rod containing electric heating elements is inserted into the cavity of the spinal column. The same method may also be used for a uniform tenderizing of the beef through mild heat application. Rights in the patent are assigned to the Industrial Patents Corporation.

Science News Letter, October 27, 1945

ASTRONOMY

Discoverer of Planet Goes to UCLA

➤ THE DISCOVERER of the planet Pluto, Clyde W. Tombaugh, is to be visiting assistant professor of astronomy at the University of California at Los Angeles. During the term beginning Oct. 26 he will give classes in celestial navigation, an essential part of air navigators' training, as well as in elementary and stellar astronomy.

Mr. Tombaugh was a young assistant at the Lowell observatory at Flagstaff, Ariz., when he discovered the ninth major planet in the solar system. Subsequently he was first holder of the Slosson scholarship at the University of Kansas, founded in memory of Dr. Edwin E. Slosson, first director of Science Service. Mr. Tombaugh received his bachelor's degree there in 1936, and his master's degree in 1939. In recognition of his discovery of Pluto, he was awarded the Jackson-Gwilt medal of the Royal Astronomical Society in 1931.

Science News Letter, October 27, 1945

ENGINEERING

Gas Turbine Laboratory To Be Established

➤ THE IMPORTANT role that gas turbine engines are expected to play in the power field in the future is indicated by plans recently announced to establish a gas turbine laboratory at the Massachusetts Institute of Technology. It will be used for graduate instruction and fundamental research in this new and promising field in engineering.

The gas turbine was applied during the war with spectacular success in jet-propelled aircraft and is considered one of the most important technical developments to emerge from the war. As a power plant it holds great promise for many other transportation and industrial uses. However, it is as yet far from perfect and there is a need for technical research and the discovery of new techniques required in the construction of these engines which operate at extremely high speed, high temperature, and high compression.

The new laboratory will contain a supersonic wind tunnel and unique facilities for research on the elements of compressors, combustion devices, jets, and gas turbines. It will also have testing facilities for the operation under controlled conditions of such devices.

Science News Letter, October 27, 1945

ASTRONOMY

Mars Begins Its Approach

Four first magnitude stars, Vega, Deneb, Fomalhaut and Capella are also visible on November evenings. The famous meteor shower occurs on the 15th.

By JAMES STOKLEY

➤ STILL approaching closer to earth, and at the same time increasing in brightness, the planet Mars comes into easy view during the month of November. It does not show on the accompanying maps, as they depict the appearance of the heavens at 10 p.m., standard time, on Nov. 1 and 8 p.m. at the end of the month. On Nov. 1 Mars does not rise until about 10:30, when it appears in the northeast in the constellation of Cancer, the crab, just under that of Gemini, the twins, which does appear on the maps in the northeast. In this figure another planet, Saturn, is shown, but it is about three-fourths the brightness of Mars.

Looking among the stars—those distant suns which unlike the planets shine with their own light—we see a familiar group reappearing in the east. This is Orion, the warrior, which is so conspicuous on winter evenings. Three stars in a vertical row form the belt of the warrior, who is now on his back. North of the belt is the bright star Betelgeuse, south of it is Rigel. Directly above Orion is Taurus, the bull, in which the bright red star Aldebaran is conspicuous.

High in the south is the familiar "great square," three stars of which are in Pegasus, the winged horse, and a fourth, Alpheratz, in the upper left corner, in Andromeda, the chained princess. None of these stars are of the first magnitude, but they are all easily located.

First Magnitude Stars

Three stars that actually are classed as first magnitude can be seen in the west, led by Vega, in Lyra, the lyre. Above this and a little to the left is the northern cross, in a vertical position, which is really part of Cygnus, the swan. The bright star Deneb is at the top of the cross. Farther to the left, about as high as Vega, is the third of these first magnitude stars, Altair, in Aquila, the eagle.

Low in the south is still another first magnitude star, Fomalhaut, which is so near the horizon that it does not appear as bright as some that are higher though fainter. The light from a star that is low in the heavens has to pass through a greater thickness of the earth's atmosphere than one that is nearer the zenith.

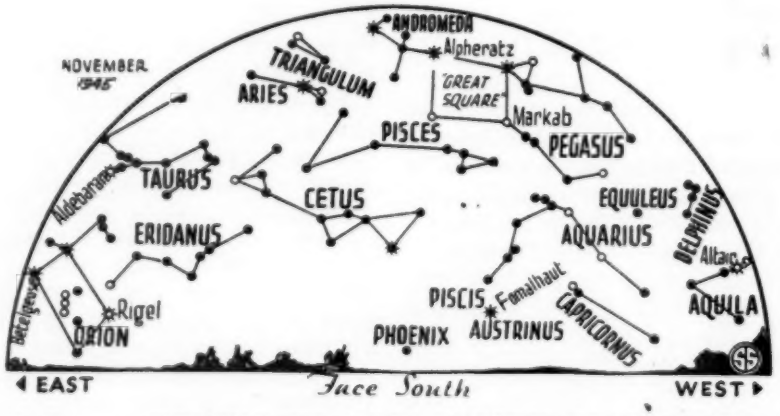
Last of the stars of first magnitude is Capella, in Auriga, the charioteer, in the east above Gemini. About half way between Auriga and Lyra is the pole star, Polaris, part of Ursa Minor, the lesser bear. Ursa Major, the great bear, of which the great dipper is part, is low in the north, in its poorest position of the year. High in the north, however, in its best position, is Cassiopeia, the queen, with the principal stars arranged to form a letter M.

As for the other planets, not already mentioned, Mercury is very briefly in the evening sky about Nov. 17, but it is so low, and sets before the sky is very dark, that it will be hard to locate. Venus is in the constellation of Virgo, the virgin, and rises in the east about two hours before the sun. Jupiter is also in Virgo, farther west, and rises about three hours before sunrise.

When, in the next few months, Mars reaches a brightness of magnitude minus 1.2, brighter than any night-time star except Sirius, the most brilliant of all, it will be hard to realize that during the early part of 1945 this same planet was down nearly to the second magnitude, but that is the case. The reason for this great change in brightness, of nearly four and a half times, is found in its changing distance. The earth's average distance from the sun is about 93,000,000 miles, and that of Mars, next planet out, is 141,500,000 miles. When the earth and Mars are in opposition, or both in the same direction from the sun, they are near together, while at times when Mars is in the same direction as the sun is from us, as it was at the end of 1944, it is very far away.

On Jan. 1, 1945, Mars was just moving to the west of the sun, and then was about 2½ times as far as the sun, making its distance about 225,000,000 miles. But this year it has been drawing in, and getting more brilliant, so that on Nov. 1 it is at exactly the sun's distance. By the end of November it will have moved in to about 74,000,000 miles. Next January, when it is closest, it will be only 59,200,000 miles distant, and then it will start withdrawing again. During the rest of the autumn and early winter, it will be coming into a better and better position in the evening, and as it brightens it will be interesting to watch.

Its approach in January, however, will not be a particularly close one, as Mars may approach within about 34,000,000 miles of the earth. The reason for the great difference in the distance to which Mars can approach is found in the eccentricity (or departure from a true circle) of the orbit of Mars. At the places where the two orbits are closest, they are only 34,000,000 miles apart, so



when the opposition occurs at this position, that is the separation of the planets. The opposition next January will occur when they are in parts of their orbits that are very far apart.

On the evening of Nov. 23, when the moon rises, people in the western part of the country will see Mars just above it. But in the east, people watching the moon rise, will not see Mars at all. For there, at that time, Mars will be hidden, or occulted, behind the moon. In Europe it will be possible to see Mars before its immersion, or covering, by the moon, but even in the eastern part of the United States this occurs before moonrise. At Washington the planet will reappear from the moon's limb at 9:29 p.m., E.S.T. Throughout the east the reappearance will be at a time not very different from this. In western Massachusetts, for example, the reappearance, or emersion, will occur at 9:32 p.m. Farther west, of course, the planet will be uncovered before the moon rises at all, so people there will only be able to see the moon and planet unusually close together.

Meteor Showers

November brings one of the most famous of meteor showers, the one in which the "shooting stars" seem to radiate from the constellation of Leo. This shower is therefore called that of the Leonids. About the night of Nov. 15, the earth will pass through this swarm of cosmic dust, which moves in a vast orbit around the sun, and on that night there will be more meteors visible than ordinarily. However, conditions will not be especially favorable, because the moon will be nearly full and shining brightly most of the night. Consequently its glare will hide many of the Leonids. With any meteor shower, more can be seen after midnight than before, because then we are on the forward side of the earth and meet them coming, while during the evening those that appear must catch up to us. So if you are watching for meteors on the night of the 15th, you will have to stay up late to see them at their most numerous.

Celestial Time Table for November

NOV.	EST	
2	7:19 a. m.	Moon passes Jupiter
	2:51 p. m.	Moon passes Venus
3	10:44 p. m.	Algol (variable star in Perseus) at minimum
4	11:00 a. m.	Moon farthest, distance 252,700 miles
	6:11 p. m.	New moon
6	7:32 p. m.	Algol at minimum
12	6:34 p. m.	Moon in first quarter
15	Early a. m.	Leonid meteors
17	3:00 p. m.	Mercury farthest east of sun
18	9:00 p. m.	Moon nearest, distance 221,900 miles
19	10:13 a. m.	Full moon
21	3:37 a. m.	Algol at minimum
23	8:06 a. m.	Moon passes Saturn
	10:20 p. m.	Moon passes Mars
24	12:26 a. m.	Algol at minimum
26	8:28 a. m.	Moon in last quarter
	9:15 p. m.	Algol at minimum
29	6:04 p. m.	Algol at minimum
30	12:25 a. m.	Moon passes Jupiter

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, October 27, 1945

ORDNANCE

Japs Got Greater Tonnage Of Incendiary Bombs

➤ THE JAPS were on the receiving end of a greater weight of air-borne American incendiary bombs than the Germans, although the actual number of such bombs dropped on the Japs was less than the number unleashed in the sky over Germany. This is because a new type of bomb, known to soldiers as the "goop," came into action relatively late in the war. This bomb is much heavier than those used previously, and also much more destructive.

The "goop" is a pyrogel bomb, containing napalm, or thickened oil, as an ingredient. Over 88,000 tons of various napalm type bombs were dropped in the Pacific area, while about 42,000 tons were used in the European area. These are figures just released by the Chemical Warfare Service.

Approximately 50,000,000 Chemical Warfare Service incendiary bombs were dropped from the air in the late war. Of this number, more than 28,000,000 fell on Axis targets in the European and Mediterranean theaters, and more than 19,000,000 on Japanese installations. The fire tonnage in the Pacific area was 122,000, against 120,000 tons in Europe.

The most used individual bomb in number and tonnage was the M50 four-pound magnesium firestick, dropped in clusters. More than 37,000,000, or 92,000 tons, of these were unleashed on all theaters.

Science News Letter, October 27, 1945

GENERAL SCIENCE

Competition Announced for Five $1500 Scholarships

➤ FIVE $1500 science scholarships at the University of Rochester, open to students in nearly 3,000 high schools and preparatory schools, are announced by the University and by the Bausch and Lomb Optical Company, sponsors of the scholarships. This is the third year of the competition.

The scholarships will be awarded next spring, after a competition among students who have become eligible through the winning of honorary award medals offered by Bausch and Lomb. Winners are brought here for final tests and interviews, and are entertained for two days with all expenses paid.

Science News Letter, October 27, 1945

Of the 7,306,000 *troops* shipped overseas in the past four years, 4,687,850 departed from East Coast ports, 2,451,000 from the West Coast, and 167,000 from Gulf Coast ports.

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Do You Know?

Piano strings are almost eight times as strong as ordinary steel.

Some *forest fires* travel faster than a deer can run.

X-rays have now been used in hospitals for just 50 years.

Lily bulbs, formerly Bermudan, are being grown in Florida with apparent success.

Mica, an essential in electrical instruments, is no longer under government restrictions.

A *whistle* that emits sound waves of too high a frequency to be detected by human ears, but which do irritate pigeons, is to be used experimentally to drive out perching pigeons on a Western public building.

Essential *oils,* though having a widely different chemical composition, have three common properties; volatility; combustibility, and the ability to form only a temporary grease spot on paper.

A solution of certain *resins in alcohol,* for application to the hands of surgeons and nurses making the use of rubber gloves unnecessary, is reported to have been developed in Germany.

Government chemists are obtaining 90 gallons of *liquid fuel* from one ton of such farm wastes as corncobs and cottonseed hulls; the fuel is 50% ethyl alcohol, the rest being butanol, acetone and other flammables.

Five breeds of *dogs* were found best for Army purposes, and only these, or positive crosses of these breeds, were accepted for military uses; they are the German Shepherd, Belgian Sheep, Doberman Pinscher, Collie and Schnauzer.

Ambergris is a curious substance that seems to be produced only in the intestines of sick whales; formerly used in perfume making, it has now been replaced by synthetic chemicals.

The *helicopter* is proposed for the farm spraying program because it is a type of aircraft that can hover just over an orchard tree until the spraying of the tree has been thoroughly completed.

ETHNOLOGY

NATURE RAMBLINGS
by Frank Thone

Syncretic Holiday

See Front Cover

➤ HALLOWE'EN, as the shape of the word indicates, is a contraction: in extended form it is the Eve of All Hallows, or in more modern ecclesiastical language, the Vigil of the Feast of All Saints. As such, it is supposed to be a day of soberness and fasting, in preparation for the solemnities of the morrow.

What connection has such a strictly religious observance with pumpkins and cornshocks such as those pictured on the cover of this SCIENCE NEWS LETTER, with black silhouettes of witches and cats, with kids wearing false-faces and fancy costumes and playing pranks in the streets after their usual bedtime?

The story is a long and curious one, involving pagan antiquity, the policy of the ancient Church, and a transplantation of European culture into a new land. It begins with the harvest-home feast observed in practically all agricultural lands, where the people rejoice and give thanks for a good crop, and take a little time off from hard work. In ancient Latium, it took the form of the Saturnalia, when the banished father of the Olympian gods was permitted to return for a little while, and everybody had a good time and nobody worked.

Came Christianity, and Jupiter and all his court had to join Saturn in exile. The feast remained, for the policy of the Church was not to uproot violently but to convert and change meanings; the places of the many lesser gods were taken by the host of saints. The gods, going underground, became imps and hobgoblins, and had their day (or rather, their night) just once a year. As slaves had enjoyed a brief spell of license under the Roman rule, serfs and lower servants and children took leave to frolic under the newer dispensation. Gradually the Saturnalia dwindled, until none but children were left to impersonate the departed and all-but-forgotten pagan deities.

When Europeans colonized the New World they, of course, brought their culture with them, including this transmogrified and much attenuated relic of the ancient Saturnalia. They found in the new agricultural products they received from the Indians materials that could be adapted for the old observances: corn grains to rattle in startling showers against window-panes; pumpkins that could be hollowed and carved and fitted with candles to make grinning heads of fiery demons.

It's a far cry from the legendary Golden Age of Saturn, when nobody had to work and everybody could do just as he pleased, to present-day pranksters with jack-o'-lanterns, and many of the connections are not at all clear, but children, those severest of traditionalists, still hang onto what they can remember of the ancient ritual.

Science News Letter, October 27, 1945

PSYCHOLOGY

Food for Europe Urged By Psychologists

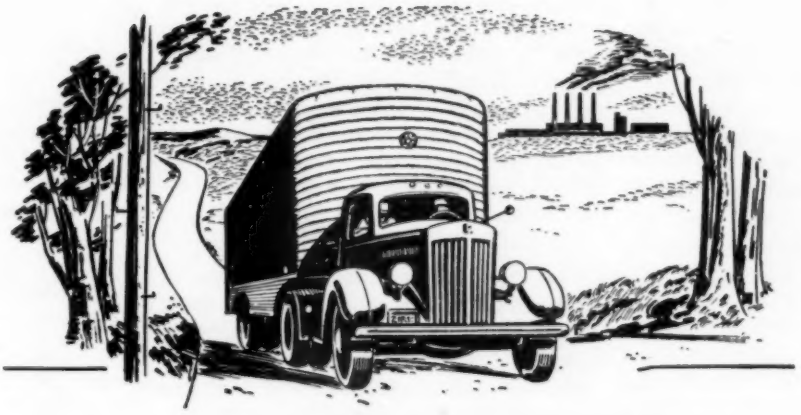
➤ IF OUR peace is not to be wrecked, food must be sent now to the hungry people of both Europe and Asia as a preventive of World War III. This is the decision of the Council of the Society for the Psychological Study of Social Issues, as announced by Prof. Theodore Newcomb, of the University of Michigan.

Starvation and misery, especially in childhood, sow the mental seeds for future wars, the psychologists agree.

An insurance against another world war, this group of scientists advocate the following steps: 1. Back a program of aid in Europe and Asia; increase the allocations of food. 2. Support OPA controls (on meats, fats, oils, sugar, fuels, etc.) as needed to implement the program. 3. Advocate immediate use of surplus Army trucks, planes and fuel for transportation of food. 4. Vote an appropriation of $550,000,000, the balance already pledged to UNRRA, and authorize an additional contribution of $1,350,000,000, as recommended in President Truman's message of Sept. 6 to Congress.

Science News Letter, October 27, 1945

BETTER GASOLINE IS HERE!



You can utilize today's gasoline quality to pay extra dividends in power and economy

BETTER GASOLINE is no longer a hope — it's a reality. Gasoline companies are now supplying gasoline with improved base stock and higher octane ratings.

This high-quality fuel will be of great value to truck operators, who are faced with the changing conditions of the postwar world—heavier competition in the truck field, demand for better service, and the need for lower ton-mile operating costs. *Higher octane gasoline, used to full advantage, can help provide the extra power, performance and economy needed to solve these problems.*

In ordering new equipment, you'll want to specify compression ratios to utilize better gasoline. Many engines now in service can also be brought up to date—can be modified to utilize improved antiknock value.

By keeping pace with gasoline improvements you will be taking a long step toward more economical operation per ton mile.

More power from every gallon of gasoline and from every cubic inch of engine displacement through

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AERONAUTICS

Air Supremacy Struggle

Now confronts aircraft manufacturers of all nations. Even an inland country possessing flying fields or lakes can be formidable competitor in postwar commerce.

➤ THE PROPOSED purchase of several Martin Mars seaplanes by Swissair, official airline of Switzerland, brings home the reminder that air commerce is not limited to those nations whose place in air shipping has been established, and that even an inland nation possessing flying fields or a lake can be a formidable competitor in postwar commerce. Daily air service between Geneva, Zurich and Paris is to be resumed; reciprocal rights agreement for American and Swiss airlines across the North Atlantic, and Swissair's expected nonstop operations from New York to flying boat bases on Lake Lucerne or Lake Geneva indicate that lack of size, world importance and even geographic locations are not retarding factors in the race for commercial air supremacy. Typical of postwar passenger and cargo planes, the Mars, capable of carrying cargo in excess of 35,000 pounds, can easily fly scheduled nonstop flights from America to Switzerland seating 132 passengers.

That France intends to enter the field is evident by the recent test flight of a six-engine, 40-passenger flying boat, said to be capable of remaining in the air for periods of 20 hours. One of England's entries, the Avro Tudor, four-engined luxury liner, sleeping 12 passengers, claims a maximum range of 4,660 miles and speed approaching 300 miles per hour. In addition to the Hermes Cargo Carrier, Handley Page has also under construction a 50-passenger transport. The 70-passenger Shetland, having a greater wingspread than the B-29 Superfortress, will be in service as well as the commercial version of the Short Sterling night bomber as an 18-passenger liner.

Before the war, airlines in this country had introduced pressurized cabin planes on scheduled flights at sub-stratosphere altitudes. On the drawing boards of aircraft manufacturers were other ships whose development was all but forgotten in the production of war planes. Republic's first commercial plane, the 40-passenger Rainbow, powered by four Pratt-Whitney engines totaling 12,000 horsepower, is believed by its designers to reach a speed of 400 miles an hour when put into operation. Lockheed's famed Constellation is already in service, as are Douglas DC-4s, perhaps better known in its Air Transport Command version, C-54. Consolidated-Vultee expects to outperform any ship in the skies with its giant 204-passenger super-clipper on order by Pan American Airways. The 10-passenger helicopter PV-3, built by the P-V Engineering Forum, Inc., landing in a 100-foot-diameter clearing on either land or water, opens new fields for feeder lines into formerly inaccessible areas.

Simple conversion of Consolidated-Vultee's Liberator, Privateer and the new Dominator, together with Boeing's B-29, to peacetime transport will place America easily in the lead without a struggle for new design or drastic engineering changes.

Science News Letter, October 27, 1945

The *Shu King,* the oldest known scientific work, states that 2,000 years before the present era, the Chinese determined the seasons, and the positions of the sun at the equinoxes and solstices.

Peanuts, formerly produced merely for the edible nuts, are now grown for peanut butter, oil and oil cake; their shells, finely divided and bonded with an adhesive, are used in bottle caps, replacing cork.

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• Books of the Week •

➤ THE SMYTH REPORT, formally ATOMIC ENERGY FOR MILITARY PURPOSES, by H. D. Smyth, is now available in board covers (*Princeton Univ. Press*, $2). Notices of the reprinting of significant excerpts in *Chemistry*, and of the full text as a paper-covered Government publication, have already appeared in THE SCIENCE NEWS LETTER.

Science News Letter, October 27, 1945

➤ MALARIA has perforce been brought to the fore in our national consciousness during the past few years. This if nothing else, should insure a large readership for Norman Taylor's CINCHONA IN JAVA, a brief, vividly written, neatly illustrated history of the one natural source of malaria-controlling drugs. (*Greenberg*, $2.50.)

Science News Letter, October 27, 1945

➤ NORTH AMERICANS are interested in plants that are grown, or may be introduced, in the warmer lands to the south: hevea and cinchona, abacá and cubé, palm nuts and cherimoyas. The stories of these and many another product of the tropics, often touched with drama, are well told by 14 recognized authorities in a symposium volume: NEW CROPS FOR THE NEW WORLD, edited by Charles Morrow Wilson. (*Macmillan*, $3.50.)

Science News Letter, October 27, 1945

➤ WHEN YOU see a hyacinth or an iris or a delphinium, do you stop to think where the name originated? Many plant and animal names hark back to classical antiquity; knowing their sources adds to the intellectual and esthetic satisfaction of acquaintance with the creatures themselves. For this reason, biology teachers will welcome a new booklet by Dr. P. H. Yancy: ORIGINS FROM MYTHOLOGY OF BIOLOGICAL NAMES AND TERMS, which gives in alphabetic order brief characterizations of the mythological figures for whom plants and animals have been named, together with names of the organisms themselves. (*F. G. Brooks, Mount Vernon, Iowa*, 20c.)

Science News Letter, October 27, 1945

➤ PERSONS WHO desire a general background relative to radio, radar, high-frequency heating, television and other recent developments in which electronics play a part, will find it in FUNDAMENTALS OF ELECTRONICS, by Henry Lionel Williams. It is a simply written, not too technical treatment for those who have some electrical background. (*Blakiston*, 69c.)

Science News Letter, October 27, 1945

➤ A TECHNICAL treatment of petroleum chemistry in its analytical aspects is given in CHEMICAL CONSTITUENTS OF PETROLEUM by A. N. Sachanen. It emphasizes the so-called ring analysis developed by Waterman and the possible wide application of ring analysis. It is a book for advanced students. (*Reinhold*, $8.50.)

Science News Letter, October 27, 1945

➤ FIRST PRIZE for unpopularity among insects would undoubtedly be voted to the mosquito; on this score, at least, Thomas J. Headlee's THE MOSQUITOES OF NEW JERSEY AND THEIR CONTROL (*Rutgers Univ. Press*, $4), would hardly be rated as a popular book. It is certain to be popular, however, with mosquito control officers and with entomologists generally, for its full and accurate descriptions and good line illustrations of even obscure and relatively unimportant species, as well as for its adequate discussion of practical means for the abatement of the more numerous and troublesome ones.

Science News Letter, October 27, 1945

• Just Off the Press •

ALMIGHTY ATOM: The Real Story of Atomic Energy—John J. O'Neill—*Washburn*, 91 p., $1.

AN ANNOTATED CHECKLIST AND KEY TO THE SNAKES OF MEXICO—Hobart M. Smith and Edward H. Taylor—*Smithsonian Institution*, United States National Museum Bulletin No. 187, 239 p., 50 cents.

ASTRONOMY: The Solar System—Henry Norris Russell, Raymond Smith Dugan and John Quincy Stewart—*Ginn*, 470 p., illus., $3. A revision of Young's Manual of Astronomy. This book fills the gap between elementary work and use of highly technical original papers.

ATOMIC ENERGY IN THE COMING ERA—David Dietz—*Dodd*, 183 p., illus., $2.

THE BIRDS OF NORTHERN THAILAND—H. G. Deignan—*Smithsonian Institution*. United States National Museum Bulletin No. 186, 615 p., $1.25.

CATALYTIC CHEMISTRY—Henry William Lohse—*Chemical Pub.*, 471 p., illus., $8.50. The nature and properties of catalysts, as well as industrial catalytic reactions are discussed in detail in this book.

INTRODUCTION TO INDUSTRIAL CHEMISTRY—W. T. Frier and Albert C. Holler—*McGraw*, 368 p., illus., $1.75. An elementary course designed for the use of those who have had little scientific background.

RECENT OCCUPATIONAL TRENDS IN AMERICAN LABOR—A Supplement to Occupational Trends in the United States—Dewey Anderson and Percy E. Davidson—*Stanford Univ.*, 133 p., cloth, $2.25; paper, $1.50.

SCIENCE OF THE SEVEN SEAS—Henry Stommel—*Cornell Maritime*, 208 p., illus., $2.50. A fascinating, non-technical introduction to natural phenomena observed at sea.

THE U. S. MARINES ON IWO JIMA—Capt. Raymond Henri, Lt. Jim G. Lucas, T/S W. Keyes Beech, T/S David K. Dempsey and T/S Alvin M. Josephy, Jr.—*The Infantry Journal*, 312 p., illus., 25 cents.

VIRUS AS ORGANISM: Evolutionary and Ecological Aspects of Some Human Virus Diseases—Frank MacFarlane Burnet—*Harvard Univ.*, 134 p., $2.

Science News Letter, October 27, 1945

CHEMISTRY

Vitamin C Helps Frozen Peaches Keep Their Color

➤ ADDING a little ascorbic acid, or vitamin C, powder to the syrup in which peaches are packed for freezing will prevent unsightly discoloration, reports the New York State Agricultural Experiment Station. One gram of the ascorbic acid powder, which also increases the nutritive value of the peaches, is sufficient to prevent five pints of sliced fruit from browning.

Science News Letter, October 27, 1945

CHEMISTRY

Perkin Medal Awarded Dr. Francis C. Frary

➤ THE PERKIN medal, the highest award of the American section of the Society of Chemical Industry goes this year to Dr. Francis C. Frary, director of research of the Aluminum Company of America for his outstanding work in the field of industrial research.

The presentation of the medal will take place on January 11 at a special dinner meeting of the society.

Science News Letter, October 27, 1945

NEW "PICK-UP" CANE

Permits Disabled Persons To Pick Up Small Articles Without Painful Stooping.

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• New Machines and Gadgets •

❁ *WALLPAPER ROLLS, recently patented with adhesive on one side and a water-resistant finish on the decorated side, can easily be applied by the housewife. The pre-pasted roll is cut in proper lengths, re-rolled loosely with the decorated side out, dunked in water, and unrolled in place on the wall.*

Science News Letter, October 27, 1945

❁ *HOME-MADE up-ender, to stand heavy drums on their ends, was constructed in one plant from an old double-acting cylinder type of air hoist and a three-way valve. Drums are rolled over the hoist, air pressure applied, and they are quickly up-ended.*

Science News Letter, October 27, 1945

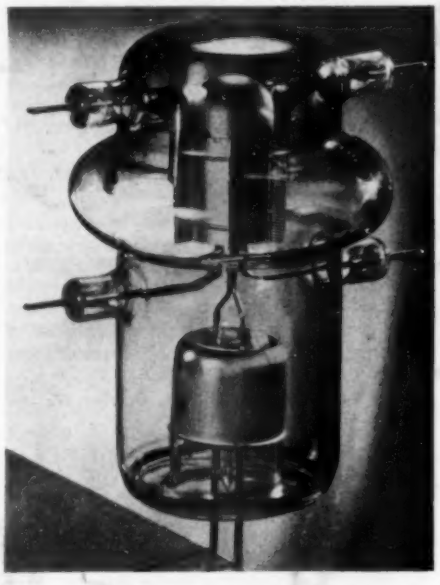
❁ *VISCOUS liquid, purchasable in containers for home and laboratory use, sets in simple molds to a hard, heat-resistant plastic for such objects as door-knobs or electrical instrument bases. It holds its shape when once set, and is resistant to oils, greases and most chemicals.*

Science News Letter, October 27, 1945

❁ *MASSAGE apparatus has dual roller applicators that turn toward each other to combine a pinching and squeezing effect. Each applicator is composed of three equidistant rolls so that at least one roll is always in contact with a removable textile apron that separates applicator and surface to be massaged.*

Science News Letter, October 27, 1945

❁ *MEASUREMENT lamps, to gauge the power output of electronic and radio*



communication equipment, have two identical small filaments mounted in lock-in type bases, one of which is shown in the picture. One filament carries the high-frequency current, the other an ordinary current regulated until both filaments are equally bright.

Science News Letter, October 27, 1945

❁ *POWER FEEDER, attached to the column of a drill press, automatically duplicates the operations of a mechanic when deep-drilling small holes. It can be set to retract the drill for full chip clearance at a pre-selected point.*

Science News Letter, October 27, 1945

❁ *CEMENTED carbide strip set in a wooden block is used to mark laboratory and other glass, replacing the use of files. The carbide edge can be used for weeks, being much harder than any glass, and is particularly suitable for marking thermometers.*

Science News Letter, October 27, 1945

❁ *PENCIL-BONDED pocket memorandum pad resembles the ordinary pad in a flexible cover, but has a recess on its open end to hold in place a flexible clip on the pencil. The clip fits over the end of the pad to hold it closed while a tiny pocket on the pad holds the pencil point.*

Science News Letter, October 27, 1945

If you want more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N St., N. W., Washington 6, D. C., and ask for Gadget Bulletin 282.

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Question Box

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